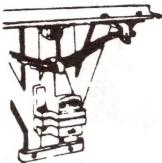


7-9/81



# EDITORIAL JOURNAL BOX

EDITORIAL

VOLUME 30

ISSUE 144

Now that 3 of our 4 Branches are producing their own Newsletter, it would seem that Branch Notes may disappear from Journal pages. This means that you will have to produce that page and a half extra in each Journal.

Of course, Journal itself could disappear, and just leave it to the branches to disseminate information. This has one serious disadvantage from the overall picture, that is, the members of one branch will not necessarily know what is doing in the other branches. But then, how long is it since that was a disadvantage to those who live in the capital cities where the branches have their headquarters?

It seems that everyone, including the Federal Treasurer, is happy with the current format of Journal. At least, the only comment I have heard is related to the appearance of the pictures. Using the current method of producing Journal, it seems that not much more improvement can be made - that is, without either changing the printer, or the person who 'screens' the pictures for him.

Hopefully, I will be able to get in some holidays in September, and so there may be a little rush in October to get the Christmas issue out a little earlier than last year when we missed the post.

Rex Little  
Editor

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## ON THE COVER

A loaded train, double headed with loco 5492 up front, pulling 98 ore cars, about 100 miles from Port Hedland.

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## THE SECRETARY'S DESK



Well, we do have our problems with Journal, even if the Editor has enough material and has it ready for printing by the middle month, power strikes, blackouts and postal bans also get into the act. Such is the modern way of life.

If by chance, this issue reaches you by the time the renewal notice has arrived, you will notice a request on same at the bottom of the form, to insert your current gauge and telephone number if they do not agree with those shown in the membership lists that arrived in Issue 143. We know members do change their gauge due to varying circumstances and the same applies to telephone numbers. We do like to keep our records up to date, but human nature being what it is, this is not always possible.

These days there is an ever increasing range of local prototype equipment coming onto the market, giving members a much wider range to choose from and this improves the operating potential of a layout.

There have been numerous articles, in various magazines, on operating in prototypical manner and giving more purpose to a layout.

Of course, there will be those who just like to see trains just running around and around. Well everyone to their own likes, but train operation even without getting involved in timetabling does create a far greater interest and, of course, the 'grey matter' has also to get into the action.

For those of you who have not indulged in shunting and remarshalling of trains, just try it some time, it will certainly test the trackwork, rolling stock, locos and quite likely controllers, to get satisfactory operation, all these need to be more than just 'good enough'.

Quite a number of modellers buy a piece of equipment, plop it onto the track and hope it runs OK, never checking wheels for trueness or back to back measurements, and when they run, shake like a heap of jelly. So what, some may say, well on the home layout it may be acceptable. But, at an exhibition a small layout that operates smoothly is far more attractive to watch than a larger one, having more troubles than a cart load of monkeys. It is also noticeable, that a lot of operators are realising that trains in the HO and N scales, running at slower speeds, enhances the whole effect of a layout. Travelling at the speed of sound does nothing, except give a kick to those youngsters who are always waiting for the inevitable crash.

One of our members is interested in having the following information added to Section 3 of our Standards:

Scale - 1:120 Gauge 9 mm Nomenclature  
TT N3½ Clearances - not yet determined,  
TT N3½ Coupler heights - same as for N Gauge Kadee.

Any member interested in this scale, contact Geoff Perkins, 7 Lisa Court, Goodna Qld 4302, then more information can then be worked out and added to the Standards Sheet.

Standards do not just appear out of the 'blue', but are the result of a lot of work by more than one person and the end result is of benefit to all who adopt them. Cuts out the trial and error and results in better operation.

In the Beginners' Guide, by Alan Dowell, first issued in the 60s, his key word was plan and that is just as good advice as ever today.

By studying layouts at exhibitions and asking questions, also at our various clubrooms, one can avoid the situation of starting a layout one day and rushing to finish it the day before

and continually messing about with it until finally in desperation the whole lot is torn up in disgust. Believe me this type of thing does happen, so never rush in to get started.

How much room does a point take up, together with a clearing distance? Some budding designers do not give that matter much thought and only find out when trying to put the design into practice and lo, the space allotted now needs to be two or three times as large. It is all part of the PLANNING advice.

\*\*\*\*\*

## TO PHOTOGRAPH A MASTERSPIECE

Reprinted from NZMR Journal,  
October 1979

Well, you have completed the model, the first thing you have ever made and now, how do you show it off to friends who don't call at your house.

Simple, photograph it in colour or black and white, and carry the photos around for all and sundry to see when the occasion allows.

I know - 'I can't take close-ups' is the usual claim by modellers, but let's see if we can't make it practical for all by analysing some of the technical jargon that confuses most.

The minimum requirement would be a camera! Other items to add when necessary would be close-up lens attachments, a tripod, and extra lights. Obviously, the better the equipment available, the easier the mechanics of photography, but some basic principles are a must for any success at all.

Depth of field The area of the subject that will appear sharp in your photo.

Theoretically, there is only one plane that can be in focus, your range-finder or focussing device will show you this, but in practice there is an acceptable area both in front and behind this plane that will appear sharp to the eye; approximately one-third in front and two-thirds behind the point of focus.

Family Membership - is the spouse or a student child of a senior member at \$2 per head, not \$2 per family as was shown in Issue 141. Of course, there is no limit to the number in a family who can join covered by the above definition.

So far I have not received any feed back on the suggestion of Member Information outlined in Issue 142, which is about par for the course.

Norm Read  
Federal Secretary

### PART 1

Figure 1 shows this in diagrammatic form, and also shows how this area A increases with any reduction in size of the lens aperture.

Many camera lenses are marked with a depth of field guide which will show you what is being referred to.

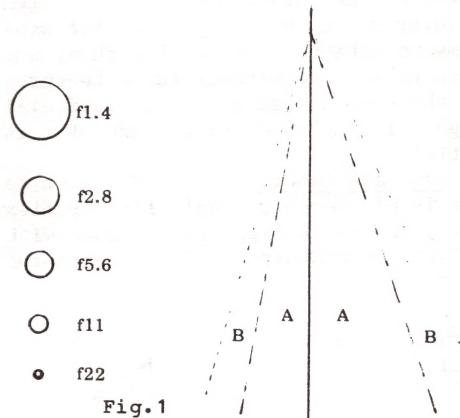


Fig. 1

Outside this area A is a second area B in which there is a gradual loss of definition that does not obey any truly optical law, but appears to vary from lens to lens, and in some cases can be used to intensify interest in the main part of the photograph.

The main factor that affects depth

of field is the distance the camera is from the subject. Stated simply, the depth of field is in a definite ratio to the camera distance and lens aperture - Figure 2 shows this relationship.

Perspective The relationship of the foreground to the background to create an illusion of depth or size in a two-dimensional format.

It is governed entirely by the distance of the camera from the subject, irrespective of the focal length of the lens in use! For instance, changing the lens from 50 mm to 100 mm would reduce the picture area to one quarter but the perspective or relationship of the parts in the picture would remain the same.

Conversely, changing the camera position as well as the lenses to maintain the same area of picture relative to the subject will change the perspective.

Exposure The amount of light required to reach the film and create the image for development. (Nothing to do with nature clubs.) Most modern cameras have semi-automatic (match pointer style) or fully automatic systems to achieve this. For those who have to make do without these features a chart of exposure under artificial light is included at the end of this article.

Lens and camera The best to use is of course a single lens reflex type, but all cameras can be used with a little common sense. Close-up photos

taken with a camera fitted with what is termed a standard lens will be in the range of 0.5 to 1 metre. Most cameras will focus as close as this, but if yours does not you will need a 1 dioptre close-up lens to clip on the front of the camera lens. This adaption allows focus in the range 0.5 to 1 metre.

Composition The best way to photograph and show the best points of a model.

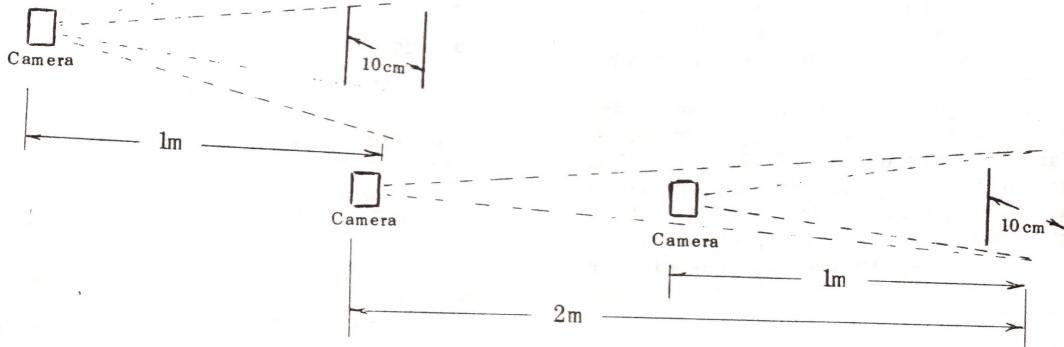
Using basic principles, in the subject chosen there will be some parts that you wish to show off. These should be placed in the best viewing area of your picture. The classic method is to utilise the thirds rule, placing the interest at one of the points shown. Unhappily this is not very often possible with our subjects, so try several positions and with practice the best will become a relatively easy choice.

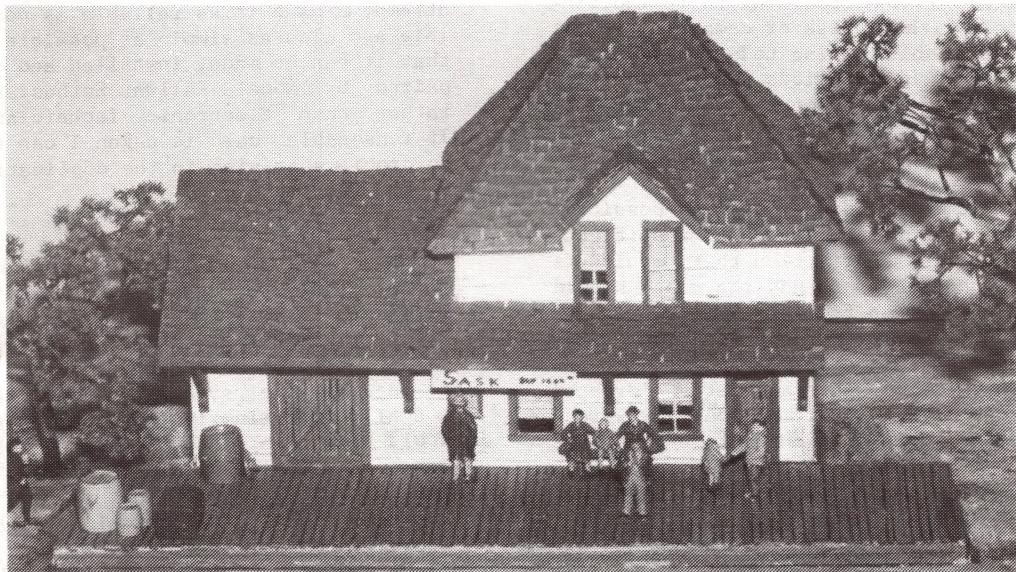
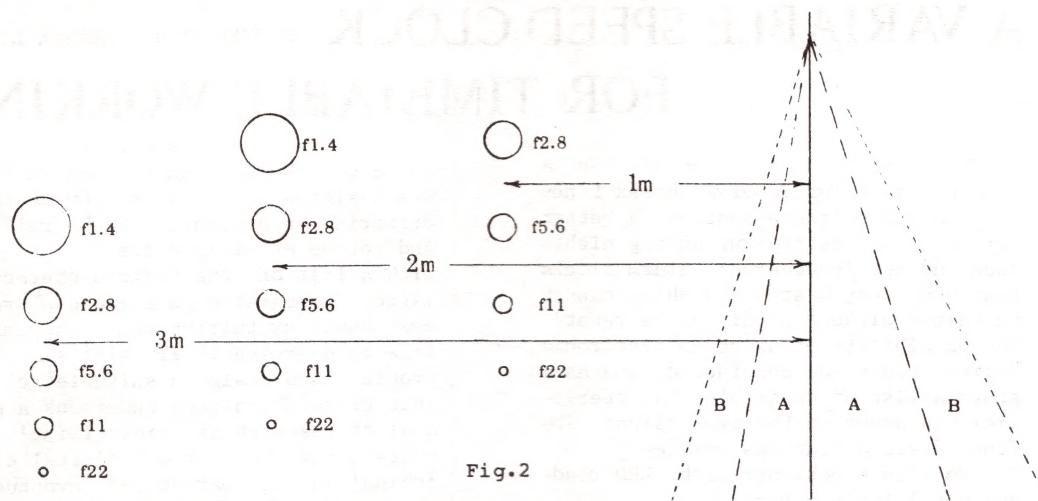
Now, before going any further, how do you want to show off your model? As a picture of a model, or are you trying to make it a picture that may be passed off as the real thing. The change is accomplished by choosing a suitable viewpoint and making perspective work for you.

A high viewpoint looking down will give a record shot of a model while changing to a position as close as possible to a normal viewpoint of the real thing will give a real-life shot.

That's enough for you to ponder on at this stage until I return to explain the use and uses of lighting.

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This station building, entered by Frank Godde in the Scratch Built Section, of the 1979 Modelling Competition run by the WA Branch of AMRA, is based on a Canadian prototype.

# A VARIABLE SPEED CLOCK AS USED ON THE WESSEX LINES

## FOR TIMETABLE WORKING

GROUP LAYOUT

This clock had its genesis in a remark made by Ted Tudor of Wessex Lines when he said 'there must be a better way of measuring time on running nights than using "butchered" alarm clocks that won't stay in step and which cannot be halted without needing to be reset'. The possibility of using an electronic digital clock was considered, and as a start a list of desirable characteristics was drawn up for discussion. The final desired features emerged.

1 Totally electronic with LED readout not 'flip-figures'.

2 Scale time to be infinitely variable over as wide a range as possible.

3 Capable of being put into a 'hold' situation and remaining there indefinitely without risk or damage. This would enable running to be interrupted -

a for short periods needed to rectify error, derailment or equipment failures, and

b for longer periods, such as meal breaks.

4 To be as 'idiot-proof' as possible. This is not intended as an insult, but rather the realisation that accidents will happen. Hence the clock should be able to run from a.c. or d.c. without regard to polarity, over as wide a range of voltage as possible and also be as proof as possible against a 'dropped screwdriver' shorting out any wires. In the case of the last mentioned, damage should be minimal and be, if possible, confined to a cheap easily replaced component.

5 The failure of a 'readout' should not prevent the clock from being used, which necessitates the use of 'plug-in' readouts.

6 A readout to be fitted at all operating positions.

It is not my intention to go into great technical detail about these considerations, but merely to say that

by R Carter

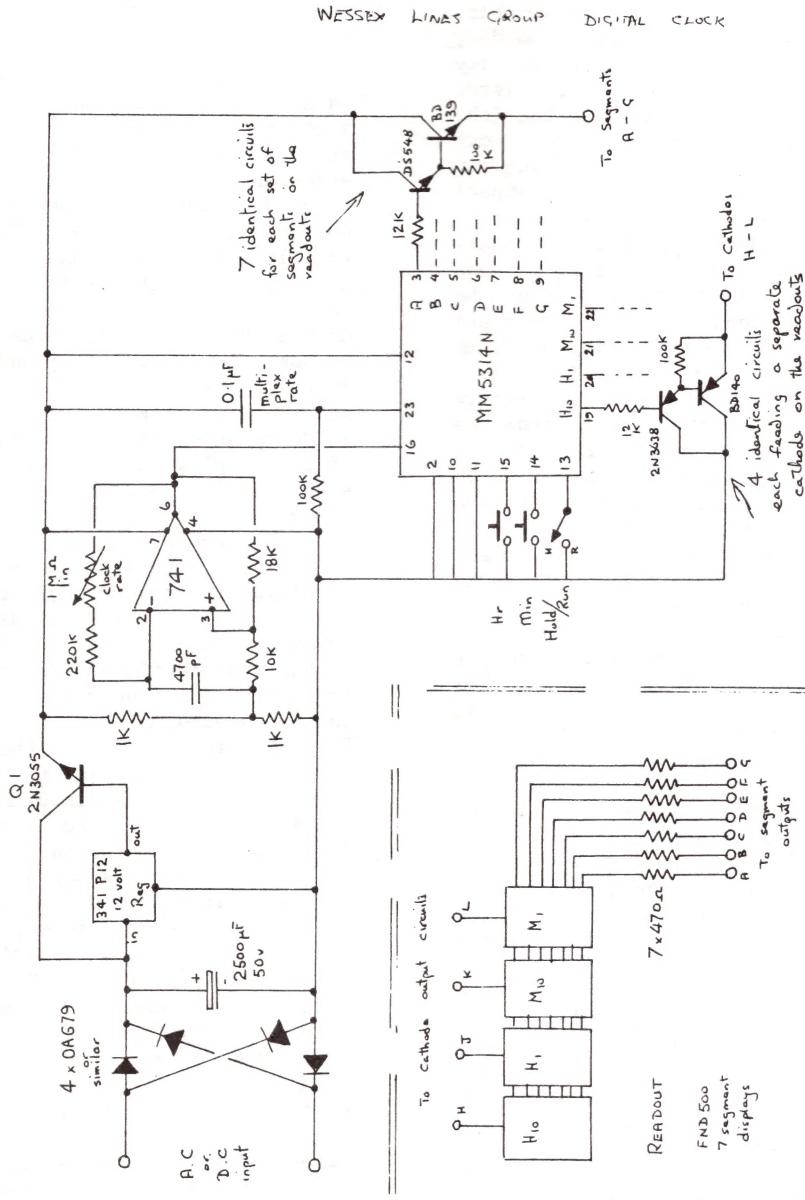
the clock as used on the Wessex Lines was designed to meet as many of these criteria as possible, to be reliable and yet be of minimum cost. Armed with a list of the desired characteristics, I suggested to a group of trainees under my tuition that they might like to exercise their talents in electronics and design a suitable clock. This group of trainees undertook a good deal of research in 'idiotising' circuits using the various digital clock 'chips' on the market and eventually came up with the finalised design shown. I must again stress that the system has been 'over designed' by present day electronic standards in an attempt to make it as reliable as possible and also as simple as possible so that it can be made, installed and repaired by Model Railway Enthusiasts rather than Electronic Technicians. If reasonable care is taken I can see no problems arising in the duplication of the system.

### ROYALTIES

Obviously the circuit used cannot be patented, but bearing in mind the great deal of interest and effort shown by the six young trainees who carried out the task of designing, building and de-bugging the system, I feel that a small honorarium is due to them and would be delighted to pass on to them any such sum. They deserve it!!!

### CIRCUIT DESCRIPTION

Referring to the circuit diagram, it will be noted that the clock is supplied via a bridge rectifier. This is not strictly necessary if the supply is d.c., but it does ensure that it matters not which way the d.c. supply is connected. If omitted, then an inadvertent reversal of the d.c. supply leads will probably destroy the clock. If the supply is a.c., then it carries



out the required rectification. After filtering in the 2500 uF capacitor the supply is fed to the regulator chip. This could supply all the power needed, but in the interests of reliability is used to control a 2N3055 transistor which metaphorically laughs at the job, being capable of very much more work than it is called upon to do. I suggest that this transistor Q1 be a 'Mil-Spec' device for reliability and also suggest that it be mounted on as large a 'heat-sink' as possible to assist in heat dissipation. The transistor should be mounted using the usual mica washer and be fitted with an insulating cover as its case is at supply potential.

The MM5314N clock chip is normally used with its timing input from the 50/60 Hz mains supply, but in this case is fed from an oscillator made up of the 741 integrated circuit and the associated components. This oscillator has a frequency range of 56-575 Hz and it feeds its output to the clock chip which accepts that as the timing input and works accordingly. So by adjusting the clock frequency from the 741 oscillator we can fool the clock chip into running at a speed that we choose and not at real time. Like most electronic clocks the time can be preset by means of the 'Hr' and 'Min' push buttons, but 'be prepared'. At a high clock speed setting, the time really flies by when either of these setting buttons are pressed. The 'hold' switch, when open, freezes the clock at its present reading. This can be useful in setting the clock on initial start up as the preset Hr and Min button still work with the clock on 'hold'. So with the switch on 'hold' the time can be crept up to the desired starting time and left there until putting the switch to 'run' starts the clock.

One point of interest is that when power is first applied to the circuit the readouts will display 00.00 but after that first time will behave quite normally, going from 11.59 to 12.00 and then 12.59 to 01.00 as the time passes. Any body who desires to work in 24 hr mode

can look up the manufacturer's data sheet which shows the necessary alterations to the wiring for that mode of operation.

The clock chip has what is known as a 'multiplexed output'. This means that the segments A-G of the four 7 segment L.E.D. displays are all fed simultaneously with one of the digits to be displayed. However, only the correct display will be illuminated as the clock will select the correct destination for that digit by 'enabling' only one of the cathodes of the four display devices. The clock will cycle through the 'Hours' tens and units and 'Minutes' tens and units sequentially and manages to keep track of what it is doing automatically. The segments of the display devices are fed via the seven 'buffer amplifiers', only one of which is shown on the circuit diagram from the segment outputs of the clock while the cathodes of the four LED displays are also fed via four buffer amplifiers from the H10, H1, M10, M1 outputs of the clock. Again only one of the four 'buffers' is shown. It is possible, if only one or two readouts are needed, to feed the LEDs direct from the clock chip, but the 'buffers' were built in so that if an accident occurs only a 20¢ transistor is destroyed not a \$7 chip. The clock chip is designed this way so that we only need 11 wires between readout and clock and not 27 which would be the case if each segment were uniquely connected.

Over there is a small price to pay. It will be noticed that if the head is turned rapidly while watching the clock then the displayed figures flicker. This is due to problems in selecting the 'multiplex rate'. If the 0.1 uF multiplex rate capacitor is made smaller in value this effect is reduced, but at the risk of an increase in 'cross-talk' between the segments of the readouts that should be 'on' and those that should be 'off'. Experiment with this if you like.

In the case of the Wessex Lines clock the readout was fabricated in balsa wood to mount, protect and disguise the electronics, and also to provide sufficient insulation at the very low voltages, about 1.7 V, used.

As shown, the clock is quite happy with a supply, either a.c. or d.c., providing it is not less than 20 V d.c. or 14 V a.c., or greater than 21 V a.c., 30 V d.c. Outside these values we don't know what happens. At lesser values, brightness of display will be reduced, and at greater values it is possible that the chips will destroy themselves. The clock itself is very uncritical concerning the component layout, and in the case of Wessex Lines, is built into a box 6" x 4" x 2" or whatever that is in 'funny figures'. It is constructed on Vero-board (ask your group's electric/electronic expert) and feeds its readouts via a polarised 11-way socket and plug connected in parallel across these wires and use an identical 11-pin plug and socket. This enables the readouts to be checked by plugging them one at a time into the clock. If they all work like that, then any fault must be in the wiring.

Also using plug-in readouts permits the removal of 20th century technology if it is desired to take photographs of a period layout.

As built, the range of scale times available is from about 2 to 10.5 times real time and the scale is 'stretched' at the slow speed and making it easy to select the desired time 'rate'.

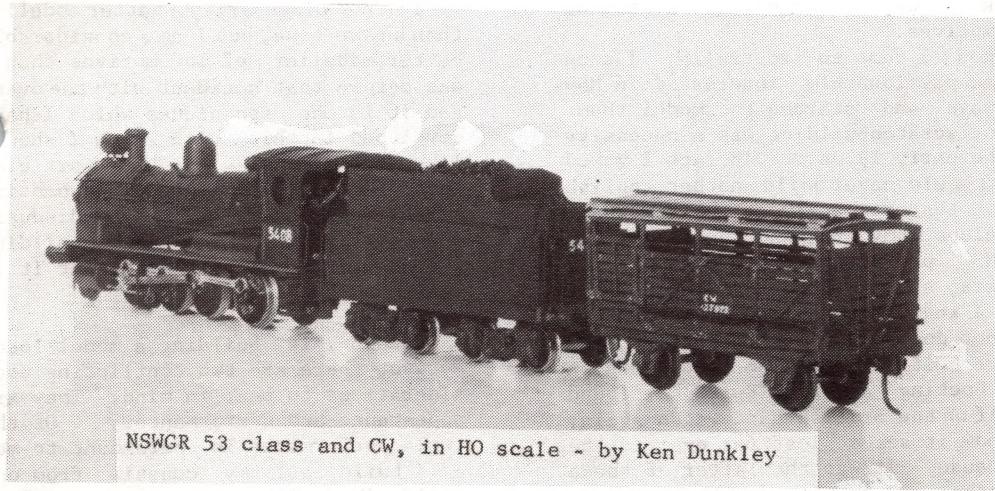
After construction, a few minutes with a stop watch and a piece of paper will enable a calibrated scale to be made and fastened to the front of the box so that a knob attached to the 'time' control can be aligned correctly. The present clock, while on test, has driven eight readouts simultaneously for 24 hours' real time without distress.

#### COST

At present day prices, with say, seven readouts, the total cost excluding layout wiring should not exceed \$100.

Since its installation in July, the clock has given no trouble, and I think the group are reasonably satisfied with the device. I certainly am very pleased with the efforts Messrs Buis, Delchoy, Glasoon, Mackenzie, O'Rourke and Taylor made to produce such a satisfactory design.

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NSWGR 53 class and CW, in HO scale - by Ken Dunkley

# LOCOMOTIVE SCRATCHBUILDING

by Ångström

## Introduction

I have been building model locomotives all my adult life and although I am very much an operator rather than a collector or fiddler, my own layout exists very much as a device to display my locomotives, and my rolling stock exists strictly to fill up the space on the track that just happens to exist behind the locomotive.

I built my first locomotive from cardboard at the age of 14, not because I wanted to build a locomotive, but because it was the only way to obtain a locomotive of a Southern Railway prototype. In case you did not know, I was born and brought up in England in Southern Railway territory, and, as a youth had eyes for that railway alone.

I progressed from cardboard, to aluminium, to tin plate, and eventually to brass or any other scrap metal I could lay my hands on, all as a means to an end rather than for the pleasure of modelling. When my saviour Mr Wills started producing kits of Southern Railway locomotives, I became very much a kit builder as this was the quickest way of acquiring a stud of locomotives.

When I came to Australia, I soon became passionately interested in NSW railways and started to model them. Again, scratchbuilding was a necessity in the early 1970s. In fact I vowed that I would never build another English loco. Unfortunately at the time, all the clubs in my area who specialised in the NSW prototype were closed to new members, and all the other NSW modellers that I knew proved to be great talkers but not doers. On meeting two very active British prototype modellers in Doug Bocking and Phil Knife, I found myself on the British band wagon again; and now it seems lost for ever to the NSW cause. It was the latter of these two people who convinced me that styrene sheet was the ideal modelling material

for speed and ease of construction, and I built a small locomotive from styrene in two weeks. I was so overwhelmed by the speed of it all that I vowed never again to make a metal locomotive.

It was then that by an accident my attitude to modelling changed. In order to accelerate the drying of the finishing touches of the paintwork of the loco which I had just made, I did my usual trick of placing the model in a just warm oven. Well you have guessed it, I was distracted just as I turned the oven on, and when I returned the model was ruined. I there and then vowed that never again would I make a plastic locomotive. They say that vows are made to break, and I have broken many, but this latest one has lasted for eight years to date. I quickly rebuilt the model in metal and from that day I became what might be called a compulsive scratchbuilder. That is to say I now build exclusively from scratch in metal, for by so doing I can make anything better than could ever be obtained from a kit or proprietary line.

I am not necessarily a better modeller than anyone else, but I am a considerably better modeller of locomotives than I was before that accident with the oven, and it is the techniques which I have developed in this time which I should like to discuss in this article. More precisely, it is steam locomotive scratchbuilding which I want to discuss, not that I object to anyone else building rectangular boxes on wheels, but it is just not my thing.

## Chassis

When one is building a model locomotive, there are two conflicting considerations to bear in mind. They are appearance and performance. Of the two, performance is paramount to me.

I build all my chassis from one solid piece of brass, mill out slots for the driving axle, and place a keeper

plate over the axles for retention. I machine my driving wheels on an accurate lathe, making sure that all wheel diameters are the same. All this ensures that all drivers are sitting squarely on the track. The only disadvantage of brass for a chassis material is that after about 10 years I have found that considerable wear has taken place in the bearings, and I am in the process of fitting phosphor bronze bushes on to the axle for bearings.

As far as possible I like to have electrical pick-ups on all wheels of a locomotive, including the tenders, and where a bogie is concerned I will apply compensation to ensure all wheels are on the track.

On the 0-4-4 tank locomotive, I built the whole driving mechanism on to a compensated bogie. However this was done more as an academic exercise than out of necessity. Nevertheless I am never satisfied with a locomotive unless there are at least four pick-up points on each side.

Although I am prepared to make compromises in the appearance of a locomotive in order to gain reliable performance, such compromises are only made if I run out of mechanical ingenuity. For example, on a model of a NSW C32 class loco that I made, I fixed the rear bogie axle of the locomotive and then swung the front bogie axle in order, on sharp curves, to prevent the bogie wheels running into the cylinders which I was determined should be of the correct size and spacing.

#### Bodywork

There is very little to say about

the basic superstructure of a locomotive except the material to use. Probably the best all round material is nickel silver, because it is stiffer than brass, and more importantly it has a conductivity of heat 4 times poorer than brass, and this means that less heat is needed in soldering. If I am punching out rivet detail however, it is essential to use a softer material and brass 0.25 mm thick is ideal.

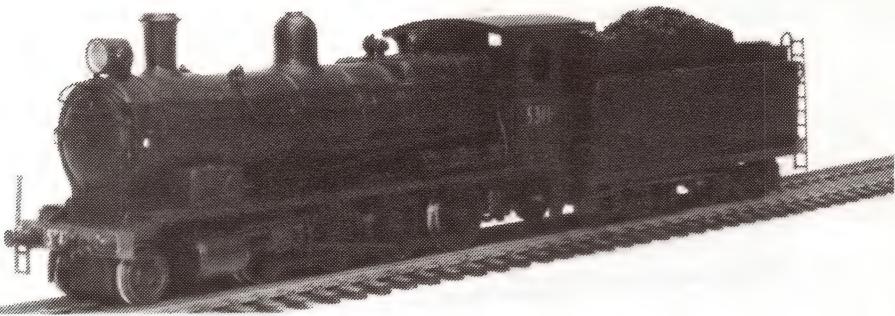
The best advice I can give to scratch-builders is to use as thin a gauge of sheet material as you can handle, and in any case never thicker than 0.4 mm. The reason for this is twofold. Firstly thin material gives better appearance because it is more prototypical, and more importantly, it is easier to solder very fine details on to thin material and easier to keep them there. For instance, if something like a lamp iron gets a little knock, something has got to give. If the platework has a little spring in it, it will probably save the detail from being knocked off.

Personally, I use stainless steel extensively in body construction because in most cases it is even stronger than nickel silver, and has an even lower conductivity of heat. However, beware because some grades of stainless steel are quite soft. Also, stainless steel can not be soldered easily without the use of phosphoric acid as a flux.

Finally, as far as basic superstructure is concerned, cut out the shapes carefully with a jewellers saw (also called a piercing saw); never use tin snips for this distorts the metal; and use a liquid flux such as 'Bakers



NSWGR AD60 class Garrett in 0 scale - by Bert Heatherington



NSWGR 53 class, in HO scale - by Ken Edwards

Fluid' when soldering the pieces together. Also, check for squareness and parallelness at all stages of assembly, ruthlessly disassembling any item that does not turn out geometrically true. Making bodywork is not difficult, and if one is not prepared to take care, one does not deserve to make a good model, and perhaps win competitions.

#### Detailling

In more than any other respect, that which places models into the category of good, bad or indifferent, is the quality of the detailing. I think competition judges place far too much emphasis on the quantity of detail, rather than its quality. The most important aspects of a locomotive are the boiler fittings, for upon these will the character and likeness to the prototype depend.

Singularly, the most important item of appearance to a locomotive is the chimney. It is essential to get a good drawing of a chimney, take a lot of time in its construction and uncompromisingly reject any item that appears less than perfect. Brass is a poor material to use for chimneys for it is very difficult to get paint to stay on the rim of the flare and the resultant gold ring is very obtrusive. I would recommend the use of free machining mild steel, or better still, perspex. Perspex has excellent machinability,

and most importantly, detachment of paint in small areas is unnoticeable.

I believe the most neglected item in modelling is the dome. In real life, domes are beaten out of something like 1.5 mm gauge metal, which in HO scale means about 200ths of a millimeter. I always make my domes out of free machining brass, and spend hours shaping the skirt with fine files followed by fine emery paper. After the dome is soldered on, the shaping of the skirt is continued until there is a just perceptible step between it and the boiler. This discussion on domes, equally well applies to safety valve covers where these are mounted on top of the boiler. Some people screw their domes and safety valves on as I used to do, but this always results in a crudely fitting detail.

A common fault among scratchbuilders is to ruin the locomotive by fitting poorly aligned boiler bands. There was an entry in a recent modelling competition which was beautifully modelled except for crooked boiler bands which jumped out and hit you in the eye. In my opinion there is only one way to make boilers, and that is to turn them in a lathe, machining the smoke box and boiler bands in one integral unit. I usually use brass, but beware of starting from brass tube for it is never made from a free machining alloy. If possible

start from a piece of solid cast brass rod, and after machining the exterior, drill it out leaving as thin a shell as possible, certainly not much more than 0.5 mm, and then it will be easier to solder on the details.

Boiler hand rails are another important detail. Piano wire is the only worthwhile material. The secret of excellent hand rails is to straighten the wire first. I simply stretch it with one end in a vice and the other end held with pliers while I heat it to dull red with a bunsen burner or candle flame. Similarly all pipework which is meant to represent bright steel or which will eventually be painted over is best made from piano wire. There is really nothing else which is quite stiff enough to avoid damage when the model is handled.

One of the most difficult details for the scratchbuilder to make are coal rails. However, well made coal rails do enhance the model greatly, so it is worth discussing constructional methods. In HO scale, the only material which I have found to be altogether satisfactory is 0.4 mm gauge hard stainless steel. Using a metal workers guillotine, I will cut about 3 times as many lengths of the material than I need, to the nominally required width. Normally I am aiming for a width of about 0.6 mm. I will discard anything that is out by 0.05 mm or more. Apart from its strength, the great advantage of this material is that it can be delicately soldered without the risk of already attached rails becoming unsoldered. I will thoroughly clean the stainless steel strip only where it is to be soldered, drown the joint in a phosphoric acid flux and then apply a fine tipped soldering iron to the joint while it is held with fine tweezers. The soldering iron will have first been tinned with a minute amount of high strength soft solder, and all being well, a perfect joint will have been made with the solder taking only at the spot which was cleaned, and hence no cleaning up of blobs will be required. Another ad-

vantage of stainless steel is that paint sticks to it better than brass or nickel silver, which for coal rails is very important, for paint so easily gets rubbed off these delicate details.

The final aspect of detailing which I want to discuss is the smoke box front. When one is viewing a locomotive, it is usually from a frontal aspect, and therefore extra effort in the front detail is worthwhile. Again stainless steel is a good material to use for smoke box hinges, securing mechanisms and for lamp irons, all of which are essential details. Many drivers used to polish up these fittings and the appearance of a locomotive is greatly enhanced by brightwork such as this. Buffers are best not made from stainless steel for this tends to look unrealistically bright. My latest technique is to make the buffers from brass and then tin them with solder, polish them and then leave them to tarnish naturally to a dull steel like appearance.

To sum up on the question of detailing, I would like to say that nothing puts a model into the category of excellent more than a lot of high quality fine detailing. Conversely, nothing ruins a model more than low quality fine detailing. So, if you can't make it fine, leave it off. Personally I try to include every detail of which I am aware, including cab interior fittings. However, I don't consider things like cab detail and brake gear are essential, for they are rarely noticed from a normal viewing distance unless it is an open cab loco or there is a lot of daylight underneath the chassis.

#### Painting and Finishing

As an initial preparation to painting I drown the locomotive body in Selleys 'Rust Remover'. This gets rid of all metal oxides and leaves the model chemically clean. I then lightly sand blast all over using very fine sand which gets rid of any remaining muck and to some degree gives a key for the paint to hold on to.

As a primer I apply precision Paints 'Clear self etch primer' with a brush to all brass and nickel silver surfaces. No brush marks are left with this primer because it is so thin. I take care not to apply primer to any stainless steel surfaces, because it will not be etched by the primer, and will result in a less stable finish than if no primer at all were used.

For the main colour I use an airbrush with precision paints matt finish colours, thinned down about 50/50 with mineral turps. I then put on the lining (if any) with a draftsman's bow pen, using a new tin of gloss enamel; apply transfers, and finally varnish all over with floquil 'Crystal Coat'

semi gloss varnish applied with an air brush.

#### Conclusions

In this article I have not set out to convince anyone that they should scratchbuild locomotives. Rather, I have tried to convince them that should they scratchbuild from choice rather than necessity, it is only worthwhile if they are setting out to produce something which is better than can be produced from a kit or proprietary line.

I would urge you to put your major effort into basic squareness of the body work, painting and boiler fittings. Other fine detailing may be considered as a bonus only if you feel inclined.

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'Dennis P Moore', an outside frame 0-6-0 tank loco, is reputed to be the most powerful loco on the roster of the Castledare Miniature Railway in Western Australia.

# BUY or BUILD?

by J Makin

There seems to be a tradition among the higher echelons of our hobby, that the fellow who doesn't make his own equipment, especially locomotives and rolling stock, is not worthy to be called a modeller. I am not here to dispute this point, but to draw attention to certain facts.

We may well suppose that the origin of the above tradition lay in the very early days of the hobby, when the only way to obtain an acceptable model at a moderate price, was to make it oneself. In this, our predecessors had two advantages; firstly they worked in much larger scales, O gauge being then regarded as in the toy class; secondly, the acceptable standards were lower than those of today.

The situation now is far different. Not only are the popular scales much smaller, but the standards, both of hand made and commercial items, are much higher, and while many of the latter may not quite come up to AMRA or similar standards, they are much better than those the general run of model railway enthusiasts can hope to equal, let alone surpass.

It is all very well to say that anyone, after a few failures, can produce good models on a kitchen table with just a few hand tools, but it just "isn't true". Some of us couldn't do it in a fully equipped workshop. Why then waste endless hours of effort and frustration on building something which may well turn out to be a failure, when for the cost of a few dollars, we can buy something which will serve our purpose quite well, and is guaranteed to perform reliably from the moment it is placed on the rails?

The urge to possess a model railway is not necessarily accompanied by the

degree of technical skill needed to produce fine models. Should then the less skilful be denied the pleasure of running railways or be branded as 'dabblers', because they are not model engineers? For those whose chief interest lies in making models, I say 'good luck to you'. Go ahead, but don't look down your nose at the rest of us.

Now, there is much more to a model railway than engines, rolling stock and track. If a layout is to look realistic, there must be such items as station buildings, platforms, sheds, perhaps a bridge or tunnel, to say nothing of scenery; among which there are many items demanding much less skill to produce satisfactorily, and which will provide ample outlet for creative skill, while the layout as a whole will not stand or fall by their perfection or lack of it, since they are static and non-mechanical. There is also the planning and laying of the track itself, if it is to be authentic, and convenient for the marshalling, running and stowing of trains, an exercise which in the limited space commonly available, may make considerable demands on the knowledge and ingenuity of the builder.

So I would say to the beginner in this absorbing hobby, first learn all you can about real railways, then build what you can, and don't hesitate to buy what you cannot build, selecting your items carefully, and remembering that one good piece of equipment is worth any number of bad ones. If, at a future date, you feel like trying your hand at engines or rolling stock, go ahead. Your commercial items will be there to fall back on.



# WHY Sn3½?

by Graham Watson

Late in 1979, a group of West Australian members decided to model the local 3'6" prototype as, without question, the WAGR locos and rolling stock are certainly the most attractive of all the State railway systems.

The first decision to be made was what scale to use out of the two main contenders, HOn3½ and Sn3½. The group chose Sn3½ - why?

In a recent Journal article, the author put forward a very good case for HOn3½, mentioning most of the factors we took into account in coming to our decision, but despite these advantages of HOn3½, the case for Sn3½ carried the day. Why???

There were two main reasons for choosing Sn3½; the first being the amount of HO/00 equipment that could be used, and secondly, the greater size of S scale.

As an Sn3½ layout would require quite a deal of scratch building and kit bashing, the great range of HO/00 equipment is certainly a help. Without doubt, there are more 'bits and pieces' available in HO/00 scale than any other, even though only a relatively few are applicable to Sn3½.

The most obvious HO/00 scale equipment applicable to Sn3½ is 16.5 mm track. The great range of points and track available in three or four different codes makes the track laying very simple for those who cannot build their own and, of course, S scale being larger than HO/00 means that even code 100 is closer to the correct size let alone code 70. Of course, the sleepers are the wrong size, but if this is a worry, they can easily be buried in ballast as they are on the prototype.

The great range of wheels in HO/00, especially those designed for 4 mm to

the foot scale are another reason for choosing Sn3½. The closest wheel size to the prototype is 12 mm which is a standard size in OO scale, and on the market now are 12 mm wheels in a variety of patterns (disc, 3 hub spoked, double spoked) and all of a high quality.

OO and EM wagon chassis are also useful in wagon construction added to the bogies, wagon and coach fittings applicable to Sn3½.

The biggest problem to be solved is that of locos, but this is made easier because of the HO/00 loco's chassis available to construct the superstructure upon.

The other main reason for selecting Sn3½ was one of 'size', and this has two facets. The first is in the constructing of rolling stock. It is definitely easier to build a model to a larger scale as the components are just that much physically large as to make them easier to work with or in many cases, the same component is used representing a closer adherence to the prototype dimension. Fine details such as brake gear, door hinges, rivets, etc, are far more easily represented in S scale and, in some instances, by using HO/00 detail parts, which are usually made over-scale for that scale.

The second reason why the size S scale is an advantage is, probably, to my mind, the most important. In HO scale, WAGR narrow gauge rolling stock just look like small ordinary wagons, but the larger S scale displays the bulk and character of the rolling stock. It was felt, that the viewing public would more easily recognise S scale wagons running on an exhibition layout, compared to smaller HOn3½ wagons, and that is one of the objects of this exercise.

So that is our case, in general terms, for selecting Sn $3\frac{1}{2}$  for our modelling of the WA 3'6" gauge railways. S scale was selected in preference to HOn $3\frac{1}{2}$ , due to previous experience with HOn $3\frac{1}{2}$ , and the reasons stated earlier, with the major reason being quite subjective that the larger models captured the feel and atmosphere of the prototype.

That is why we chose Sn $3\frac{1}{2}$ !!

TABLE 1

Explanations of Scale/Gauges mentioned in the article.

<u>Scale</u>	<u>Inches to the Foot</u>
Sn $3\frac{1}{2}$	1:64      3/16" to 1"
HOn $3\frac{1}{2}$	1:87      -
OO	1:76      -
EM	1:76      -

	<u>mm to the Foot</u>	<u>Gauge mm</u>
Sn $3\frac{1}{2}$	4.76:1'	16.5
HOn $3\frac{1}{2}$	3.5 :1'	12.0
OO	4 :1'	16.5
EM	4 :1'	18.2

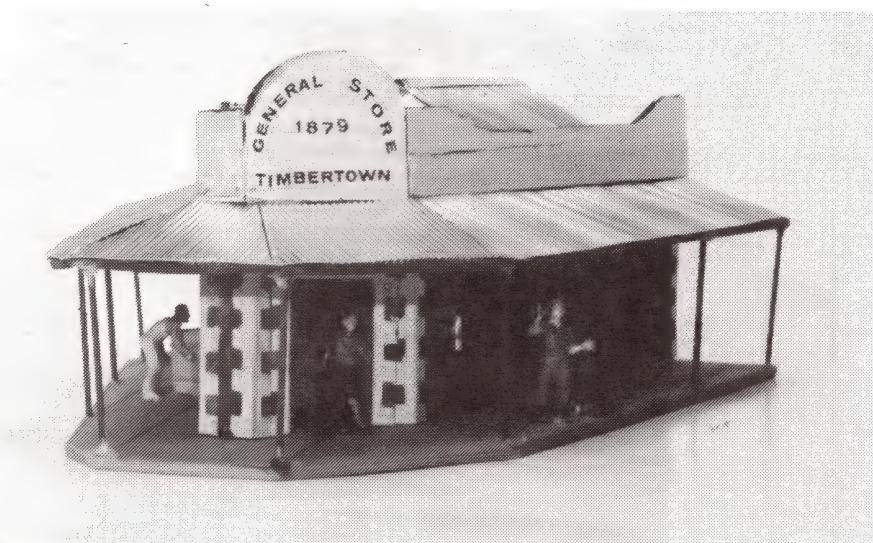
TABLE 2

The following chart shows the relationship of each commonly available size of model rail to its nearest equivalent prototype weight for each scale.

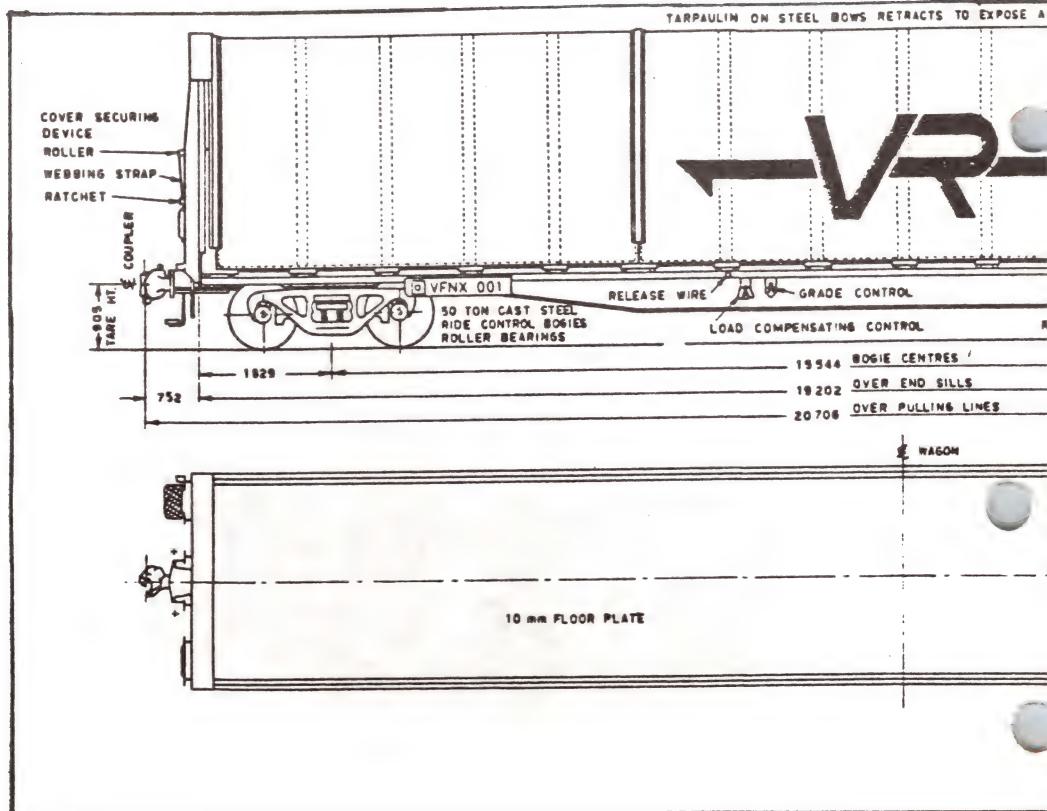
<u>Code</u>	<u>Approximate Equivalent Weight</u>	
	<u>HO</u>	<u>S</u>
100	155	115
83	132	85
70	100	65
55	75	40
40	40	25

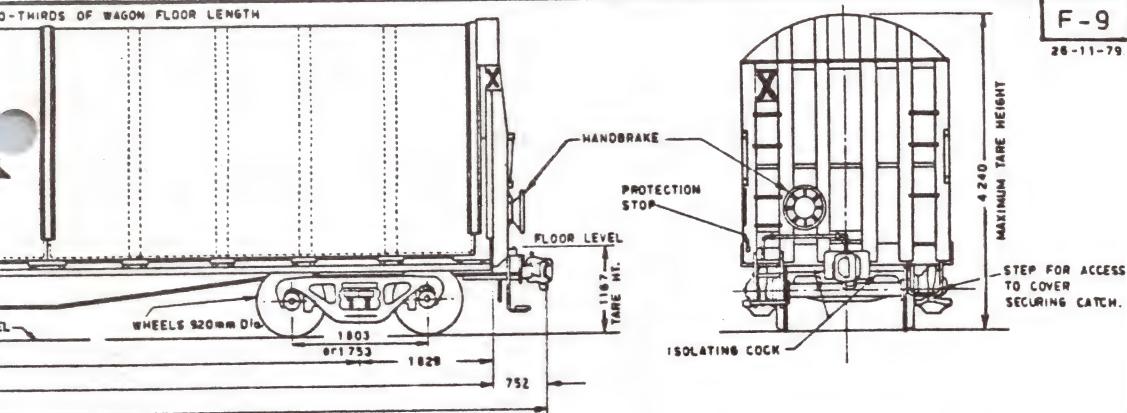
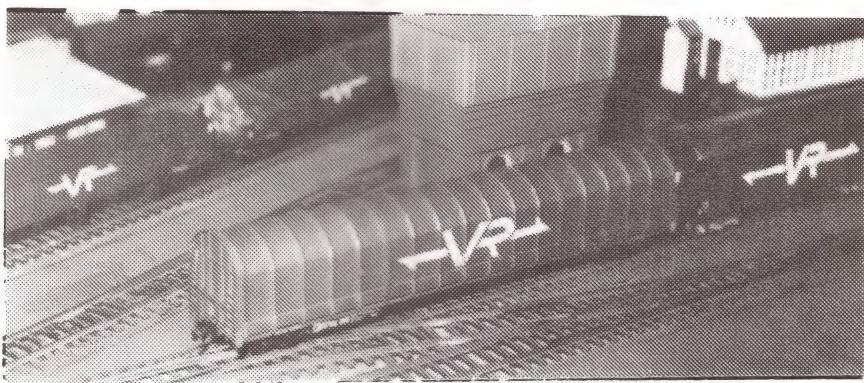
From 'Railroad Model Craftsman' - June 1979

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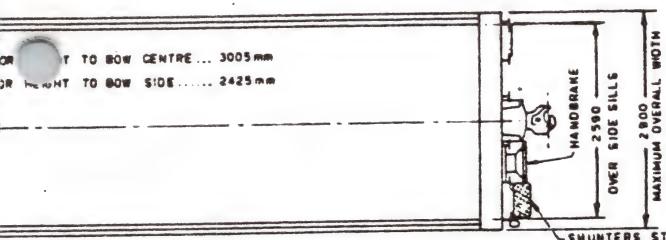


Timbertown General Store, in HO scale - by Victor Hogan





BUILT AT NEWPORT WORKSHOPS, 1979.



No 1, 2, 3, 4, 5, 6, 7, 8, 9, 10,  
11, 12, 13, 14, 15, 16, 17, 18, 19, 20,  
21, 22, 23, 24, 25, 26, 27, 28, 29, 30,  
31, 32, 33, 34, 35, 36, 37, 38, 39, 40,  
41, 42, 43, 44, 45, 46, 47, 48, 49, 50.

TOTAL 50

ARRANGEMENT	VFNX 10	CAPACITY	47 t
FRAME ARRANGEMENT	VFNX 2	TARE	28 t
USES 1435mm GAUGE	WAGONS (S.G.) 30 (1753mm W.C.)	BRAKE CYLINDER	305 x 305 mm STROKE
1600 mm GAUGE	ELF 30, WAGONS 30A (1803mm W.C.)	BRAKE % AIR	48.2 TARE 33.4 LOAD
	WAGONS 30B (1753mm W.C.)	BRAKE % HAND	129.3 TARE 48.3 LOAD

VICTORIAN RAILWAYS	
CLASS	VFNX
FLAT WAGON WITH BULKHEAD AND COVER	

# OF ROOFS AND THINGS

A SERIES OF INTEREST TO THOSE OF US WHO SCRATCHBUILD

Reprinted from NZMR Journal, February 1980

by George Gardner

Today's market supplies us with a wide range of rolling stock kits of quality equal to anywhere in the world (this assumption based on my experience with British commercial kits), which after a few hours of meticulous hand-work and assembly represent a superb realistic miniature of the prototype. But now the whole effect is to be ruined by the utilisation of card, wood or plastic for the roof.

None of these materials is suited for the purpose; as has been adequately pointed out by the fine article of Kevin Crosado's in the June Journal, whilst my reservation would pinpoint the inability for any of them to represent a scale thickness and retain the essential strength to withstand warpage, hard use, heavy fingers, etc.

I just happened by one day when some venetian blinds were being thrown out and my immediate thought was "now I could use them for the roofs of my rolling stock"! An attribute which has developed along with my involvement in this hobby is that of recycling what others consider to be rubbish - as my wife will readily testify.

The venetian blind should be of the older type which has the curvature in one direction only, and not the more modern form involving reverse curvature. If you can't graft some, then attend a couple of Steptoe auctions and you will get enough venetian blind material for \$5 to roof the rolling stock of several railways.

The material itself is ideal, being metal it retains the essential strength while being of near scale thickness; it is quite comfortable to work, takes paint and all glues very well AND by

having the preformed curvature requires very little extra stressing by bending to obtain a perfect marriage to the body of the vehicle.

Those of you who are familiar with venetian blinds will know that the surface of this material has been subject to a baked paint process which results in permanent rust inhibition and gives that surface which bonds your paint job so readily. While this is true of the surfaces, I do apply zinc chromate to the edges after all engineering is complete.

My method of cutting to size is by steel straight edge and a blunt modelling knife - three or four strokes being sufficient for the scribe and then follow with a couple of gentle flexes back and forth to obtain the separation.

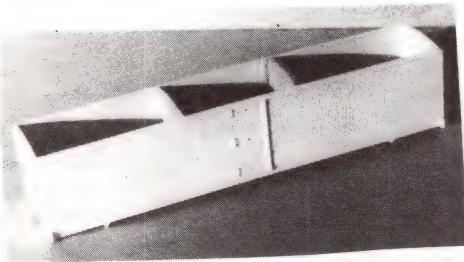
The roughage of the edges is then cleaned up with a fine file and the corners just touched with the file to blunt the sharp points to prevent future unscheduled surgery on one's hands. The engineering term for this operation is 'to break all sharp edges'.

Now dry fit the roof and assure yourself that the overhang at sides and ends is balanced, i.e. too much is rather obvious, while too little looks terrible. Here we are dealing with an error factor of .020" and 'just right' is the only acceptable rule. This doesn't mean that one must resort to a micrometer measure, but merely the fact that the nearest 1/32" is portrayed as a discrepancy in appearance. After the first two or three you will soon get the hang of it.

Paint the edges with a thin coat of zinc chromate and after this has dried

prepare for gluing to the body. To facilitate this stage, have on hand two heavy rubber bands which will go round the body when doubled, and two strips of hard wood (not balsa) of sufficient length to extend greater than the body of the vehicle.

All of my vehicles have heavy card supports placed inside, curved as to the ends so that the whole fits flush and in contact with the roof. One in the centre of Xa, Xc, Kc and Wa types two spaced at third intervals in Vb, Vs, etc. This strengthens the whole box structure against warpage or harsh handling and prevents the roof from becoming dented or depressed.



Mix a substantial amount of Bostick or Araldite, etc (your choice - mine is 5 minute Bostick), and apply this liberally along all top edges of the vehicle ensuring it is spread quite thick down the insides of the edges for 1/8" or so. Place the roof on the vehicle and with the aid of the two rubber bands pressure the roof by clamping the two strips of hard wood - one along each edge. Immediately you are satisfied with the alignment of the roof to the vehicle (a little bit of repositioning may be required here) turn the whole assembly upside down. This will ensure the excess glue flows downwards and spreads further on to the roof unit, thus substantially increasing the area of grip and minimising the risk of accidental separation of roof and body at a later date. It pays dividends at this stage to remove any excess glue which may have squeezed out while this is still in the liquid state. Otherwise you



will probably undo the good work when trying to cut it away after hardening.

The application of the venetian blind material for roofing on two kits which are currently available is the pinnacle of perfection for these models and results in outstanding realism, while complimenting the fine design which produced them. The same 'modus operandi' is used, but this time an additional piece is required to complete the clerestory part of the roof. While the 30' van kit is supplied with no roof, and two pieces will be required to complete it, the Addington car is supplied with a cast roof and only requires a topping for the clerestory.

Some hobby shops throughout the country still have stocks of a wood moulding of the clerestory style roof previously marketed by Stoker Models which, with a bit of delicate shaping on the ends and some chamfering on the sides to decrease the visible thickness, achieves a fair representation. But, if a piece of blind material is added to the clerestory section and has a very slight overhang at edges and ends, then the transformation of the model is quite startling.

The method of assembly which I have adopted for the 50' and 56' carriage kits currently available is based on the fact that I am not an artist and can never achieve a perfect line of demarcation between two paint colours. For these cars I assemble the roof as a complete unit separate from the body. This

allows me to complete the painting requirements before final assembly, e.g. black roof - red body, and results in a perfect cut between the colours.

Once again we rely on rubber bands, but this time these are backed up by two overscale hands. Position the roof on to the body and secure in place with two rubber bands of light cross section - one at each end. There is no need for the pressure to be exerted as was the case with the venetian blind material so light bands will do. Carry out engineering to the vestibule roof sections until the desired fit is achieved and mark on the underside a symbol to establish which piece belongs to which end. Remove the roof and mark the corresponding symbols on the underside.

The difference between a fine model and a just-so model is in the preparation and this next step is going to ensure that our model is a fine one. The top edges of the roof ends and the back edge of the vestibule ends should have a good chamfer filed on them. Any angle with approximately 30-45 degrees will do. Now relocate the roof on to the body and secure with the rubber bands again. Mix up your adhesive and apply a copious amount to the vestibule end, but ensure that little or no glue is in the vestibule when the end is located against the roof. Do not allow any glue to adhere the vestibule end to the carriage BODY at this point, or removal will be difficult. Having glued and positioned both vestibule ends in place to the roof, use the two overscale hands to hold them while the glue hardens, then remove the roof from the body.

If you don't already have some, visit the local hardware and purchase a small pack of auto repair epoxy resin. Mix a small amount of this material and over-fill the V joint where vestibule end joins the roof. When this has cured, the final stage of filling the excess roof, resin and vestibule end can be engineered to obtain a smooth transition and curvature of the whole roof assembly. To obtain a better

and more scale-like finish to the roof, apply a coat of sanding sealer and lightly rub this back before the paint is applied.

To conclude this article, a word of warning is to be offered and heeded. When using the rubber bands for pressurising roofs of Railmaster and other products similar to the Vb-1, which have the chassis cast integral with the side unit, be sure to use packing between the chassis members to prevent the pressure of the rubber bands from buckling them inwards.

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### ଓ.ମ୍ରା ଏମ୍ରା ଲେବ୍ସ ହୋଲ୍ଡିଂ ମେମ୍ବର୍ସ ପର୍ଯ୍ୟନ୍ତ ୧୯୮୧

Tim Dunlop	Faith Dean
Margaret Dunlop	Ernie Dean
Alan Wilson	Norm Read
Rick Richardson	Rex Little
Arthur Harrold	Maurie McKinnon
Jack Treseder	June Dunn
Cedric Rolfe	Stuart Westerman
	Bob Gorrell

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## FOR READERS LETTERS

The Editor

Dear Rex

The Nepean Sub-Branch of AMRA NSW is currently developing a HO module system which will be presented to the Federal Committee of Management for possible adoption as an AMRA standard. Several members have been involved in reviewing the drafts of their module system standards, which, although not yet fully developed for the average modeller to use, are sufficiently detailed to be used by some members of the Nepean Sub-Branch to build their own modules.

I believe that before this 'standard' is completely developed, we should consider the views of other Groups who might be working towards similar aims, and attempt to adopt or standardise upon aspects which are critical to the wide-spread adoption of the module concept.

Module standards are also being looked at by some NSW Branch members for gauge. Module information to hand consists of a tabulation of various US module standards for both HO and N gauges by Paul Ingram. Additionally we have a copy of the Mod Rail - HO manual by G Duncan, and the standards manual of the Sydney N Gauge Model Railway Club.

I would like to hear from groups or individuals with their own module standards so that those currently working on standards can review these systems with a view to possible standardisation of systems or concepts.

My address is - PO Box 87  
GRANVILLE 2142  
NSW

Yours faithfully  
Bruce Norton

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The Editor

Dear Rex

Over the past 10 years I have taken an interest in the Federal Modelling Competitions, even though never having entered myself, and have been pleased to observe an ever increasing standard of the entries. The standard of judging though, has not increased likewise.

There was a time when the Judges' comments were constructive and lengthy, but the only comments in the 1980 competitions were for the first three Scratch built locos, and even then the winner and runner up were said to be beyond criticism, apart from the 'only fair' crew in the latter.

My observations were that neither loco had any inside motion, even though the winner had a high pitched boiler; the winner had no brake gear at all, while the seating of the chimney and dome of the same loco were coarse.

The chassis of the runner-up appeared as a solid block of metal, with no detail under the boiler at all, while the transfers on one side of the same loco were poorly applied.

I am not suggesting that the Judges' verdicts were incorrect, or that their statement that the winner was the best loco yet entered in the contest was not true, but compared with British compet-

itions, which I have seen plenty of, the AMRA 1980 entries would not be placed, let alone be considered beyond criticism.

It seems to me that the present judges are no longer capable of distinguishing the loco exhibiting the finest workmanship, and that they have to resort to matters of presentation, which while vitally important in a layout competition, have nothing to do with competitions for individual models.

Yours sincerely  
Michael Adams

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#### WHY DOESN'T A.M.R.A.

On the basis of sample "Members' Information Sheet" received by me recently, consider producing a more or less regular 'Information' or 'Data' sheet on, say, A4 size (210 mm x 297 mm)

paper, loose, so that members can file them in a separate file to save having to wade through copies of the Journal to find what you want.

Foster a modular layout concept (ok I know I wrote up about 40 pages called 'Modrail-HO' and I'm not trying to flog it) Australia-wide, and perhaps someday we might be able to have a convention with modules from all States joined up to make a really big layout. It could be done, you know!

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#### I WOULD LIKE

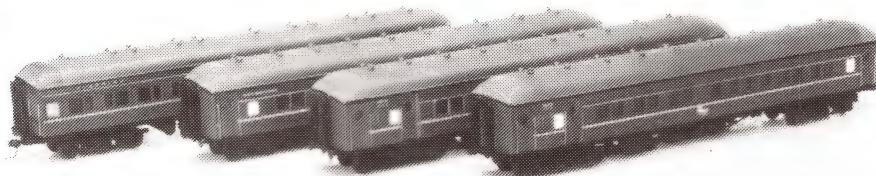
To see more sharing of knowledge between members.

More 'how to do it' articles and less reprints in the Journal.

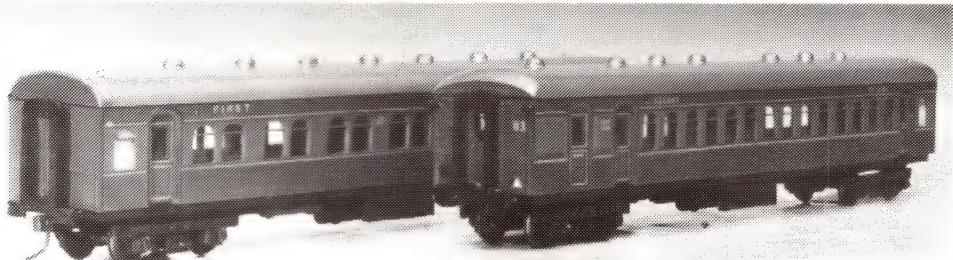
More letters to the Editor so that we all know what the other fellow thinks and wants.

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NSW PTC MUB set, 'Granville Disaster Cars' in HO scale - by John MacBeth



NSWGR NUB set, in HO scale - by Ken Edwards

# Pride, Prejudice & Magazines

by Terry Paton

I was recently talking to a model railway associate about a magazine article on landscaping. Having been, for many years, 'A TRUE STUDENT', of all established and developing techniques of all aspects of model railways, the 'discovery' of a break through technique which was both logical and applicable to most modellers' needs appealed to me greatly, and my desire to share this information caused the discussion mentioned.

It came not so much of a shock, to discover that the information was of little interest to the listener, but more the disappointment that since the subject material was of general interest to most modellers trying to perfect their basic skills, the subject was being absorbed by the listener with a very noticeable degree of 'understanding tolerance'.

Now that the statement can be interpreted in many ways, but for the purpose of this exercise, it should be clearly understood that the listener was a complete beginner!

Having been perfectly aware of the attitude on the part of the listener, I questioned the reason as to why he was basically not interested in a subject which theoretically, should have been of great interest to him and would quite definitely have been of interest to many 'veteran' modellers who have tried for years to solve this particular problem of model railways.

It appears that from the outset, his lack of real interest was largely due to the fact that the information had come from a British magazine. His basic information on the subject of model railways comes exclusively from the two most significant American model

railway (Railroad?) magazines.

Now here is a most amazing situation which I greatly suspect is not all that uncommon.

One of the great joys of model railways is to 'discover' the overwhelming wealth of material on the subject of railway transport in general. The diversity of that material can keep the truly interested individual, not only totally absorbed for lengthy periods of time, but can keep him in a periodic state of pleasurable frustration because of its 'diversity'.

When all the principles of railway transport and their associated efforts are interpreted in the form of model railways, not only do all the prototypical principles apply, but very clearly, the challenge to recreate all the tangible aspects in miniature. This challenge on the part of every railway modeller is significant, for it is a rare individual indeed who can master all of the necessary arts of that miniaturised recreation without assistance.

What I do know, and once again will try to share with someone, is that there is a continuous source of information of mostly triumphs, and some failures, of an incredible diversity of model railway developments by an equally incredible diversity of people worldwide who, fortunately, make the effort to publish those results in a whole range of 'amateur' and commercial magazines.

It is a fact of life that many people take many things for granted and I don't propose that anyone should question anything of that nature, but I would suggest that we have the distinct ad-

vantage of being part of the English speaking world.

Every published article is worthy of acknowledgement.

Every contributor is worthy of respect.

Every bit of information, whether you

realise it or not, will assist you regardless of its source.

We need the pride.

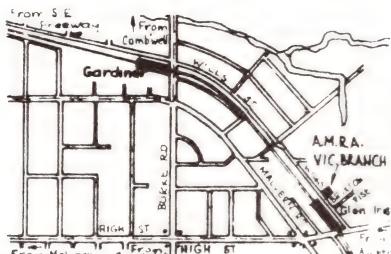
We don't need the prejudice.

And without the magazines, we would be in a wilderness.

# BRANCH NOTES

## VICTORIAN

## BRANCH NOTES



### VICTORIAN BRANCH NOTES

Yes! Victoria Branch is still going strong! We have missed an issue or two so I thought I should bring you up to date on recent events.

Did you miss our "Hobson's Bay Convention" over Easter 1981? This event was voted a great success and it was good to see so many delegates from New Zealand and interstate (not to mention one from Bahrain). It was great to exchange information and ideas and learn from others in this hobby of ours. Your humble reporter has already tried some new techniques demonstrated in some of the clinics and workshops. Thanks to Jack Treseder and his committee.

Ray Brownbill, our past President, has now retired from committee, but is

going out in style. After successfully managing our 1981 Exhibition at Camberwell, Ray is polishing up his culinary expertise to don the Chef's hat in 1982. Seems like a case of out of the fire into the frying pan. Incidentally the 1982 exhibition is promising to be a beauty with several new layouts on display for the first time. Bob Edwards is again taking up the reins in 1982.

Our clubrooms have seen considerable change over the last twelve months and more. The upstairs hall repainted and the layout room downstairs is now much brighter with the old canvas curtains removed, windows painted white and that old dark green ceiling repainted white. Our HO layout is progressing well with the scenery (and the workers) getting plastered!

A recent popular meeting night was our annual auction. A sight to gladden the heart of many an anxious seller was that compulsive collector, Frank Sheeran, raising the bid with his green hand. This two foot extension was itself auctioned off at \$1.50. It would be just the thing to give an obstinate loco a nudge at some hard to reach location.

Sorry to see that prolific layout builder, Jim Scott, return to England to live. Jim managed our exhibition

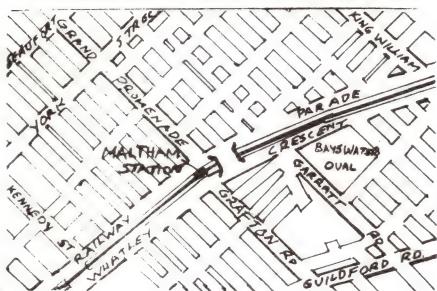
a few years ago and has also helped with electrical work around the clubrooms. Jim has promised to keep in touch.

I am sorry you will have to wait until next Journal for our coming agenda. Meanwhile just a reminder that our meetings are held on the second Thursday of the month in our clubrooms in Wills Street, Glen Iris (opposite the station). Clubrooms open at 7.30 pm for running on the layout with the meeting commencing at 8 pm. Work nights on the layout are on Tuesday nights, except for the Tuesday prior to the meeting night. Running days are held on the last Sunday of the month at 2 pm.

Interstate and country members visiting Melbourne are most welcome. Contact Roger Lloyd, Branch President, on 459 6508 for further information.

**'Sleeper'**  
Branch Reporter

#### WESTERN AUSTRALIAN BRANCH NOTES



#### WEST AUSTRALIAN BRANCH NOTES

At the Annual General Meeting on 4 May, 20 members were present to hear the reports and to elect the following Office Bearers and Committeemen for 1981/82:

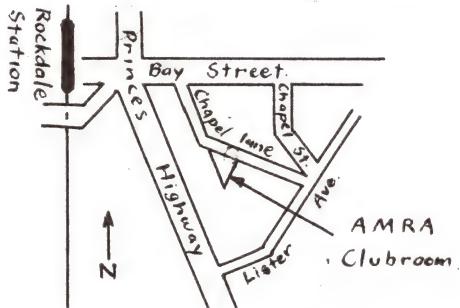
President	Ted Thoday
Vice President	Tony Gray
Secretary	John Martin
Treasurer	Alan Porter
Committee	Craig Hartmann
	George Noble
Librarian	Simon Mead
Branch Reporter	Graham Watson
What a great response we had to our	

plea in the May 'Branchline' for exhibits for our 1981 Model Railway Exhibition. We have had offers of 12 layouts, 8 of which have not been shown before, about the same number of static displays, and at least 6 Trade stands. The only problem remaining is how to get them all into the Melville Civic Centre. So keep the weekend of 24 and 25 October free for the Exhibition.

The 1981 Railway Modelling Competition was judged on 30 May, and was without doubt the best yet. There were 15 entrants and 36 entries, compared with 13 and 24, respectively, in 1980. An extra judge was needed to help with the difficult task of separating the best in each class.

Congratulations to all modellers who entered, and special tions to the prize winners, especially Gavan Stallard who won three prizes with his WAGR Z Class Brake Van in Sn3½ scale, including the Ossie Gully Cup for the second time.

#### NEW SOUTH WALES BRANCH NOTES



#### NSW BRANCH NOTICES

The NSW Branch Management Committee for 1981 is as follows:

President	Bob Wardrop
Vice President	Frank Potts
Secretary	Bruce Norton
Treasurer	John Skilton
Committee	Ron Cunningham
Branch Reporter	Bob Gioia
Elected	Norm Thomas
Librarian	Paul Murray
Auctioneer	Phil Kelly

Silver Jubilee Exhibition AMRA (NSW Branch) will attain its Silver Jubilee in October 1981, and in conjunction with our Exhibition at the RAS Showgrounds, a dinner to celebrate the occasion will be held on the Saturday evening. Therefore the times the Exhibition will be open is slightly changed this year. The Exhibition will be open at the following times:  
 Saturday 3 October 10 am to 7.30 pm  
 Sunday 4 October 10 am to 6 pm  
 Monday 5 October 10 am to 6 pm

Should you wish to participate in the dinner, at a cost of \$13 per head, you may be too late by the time this is published. However, you might enquire from Mrs G Larmour, 42 McMillan Street, Yagoona, NSW 2199.

Silver Jubilee medallions, depicting the AMRA Wheel logo on a free-standing base, and suitably inscribed, will be on sale at the October Exhibition at the RAS Showgrounds. These may be pre-ordered from the NSW Branch Secretary. The price of the medallion is \$4.50 each, or \$5, including postage. It may be wise to pre-order by writing to the Secretary and enclosing

suitable payment. Pre-ordered medallions will be available from the Club rooms or the Exhibition, or may be posted to you if you include the postage with your order.

The Exhibition is fast arriving, and with less than 20 weeks left, we are now receiving the returns from exhibitors. The Exhibition will be as big as ever, with more prizes for layouts being offered. The Federal Modelling Competition will be held over the Exhibition so any interstate visitors are welcome to enter models (last year's best loco came from Victoria). Also, if anyone wants to give up a few hours to help in the running of the show, then contact the Secretary at PO Box 194, Rockdale 2216 NSW.

From now on I will be sending less Branch Notes because we have now established a newsletter to be sent to State Members. Being involved in writing this as well, I have little time left to write to Journal. Don't forget, read your Smoke Signals.

Bob Gioia  
Branch Reporter

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## BOOK REVIEW

INTEGRATED CIRCUITS - R H WARRING

PUBLISHED BY LUTTERWORTH PRESS, 1979,  
 133 p, RRP \$13

More and more electronics are being utilised on model railways these days, and it is with interest that I enjoy 'fossicking' through publications on electronics to uncover circuits that could be of use to the average modeller.

This book covers quite a full range of Integrated Circuits (ICs) and how to use them. Two things immediately brought to light during a casual glance through the book revealed, firstly, the unusual symbol for transistors, and

secondly, the use of device numbers which may be common in the UK, but in the main are unobtainable in Australia. In fact, out of the approximately 36 ICs described in the projects, I could only find 6 or so ICs which are identical or functionally equivalent on the local 'Electronic Enthusiasts' market.

Chapter nine, deals with electric motor speed controllers, and demonstrates the simplicity of controllers

using the TDA 1151 with an output rating of up to 800 mA. This would be quite suitable for most model locomotives, but would not have sufficient capacity for double heading or for Athern locomotives. No mention is made of possible ways to increase the current capacity by utilising, for example, a series pass transistor - this is left to the experimenter. Furthermore, I am not aware of a local retail supplier of the TDA 1151.

Chapter eleven introduces Digital Circuits, which are the basis of all microprocessors and computers. Insufficient information is given for practical implementation of the various logic families (i.e. CMOS, TTL), to be

of use in building up, for example, signal interlocking circuits for even a simple system.

The other chapters cover General Purpose ICs (arrays), Operational Amplifiers, Audio Amplifiers, Heat Sinks, complete radio circuits, Multi-vibrators, Voltage Regulators, Filters, Electronic organs and miscellaneous circuits.

I cannot recommend the book for the average model railway enthusiast, as the book does pre-suppose at least a basic understanding and interest in electronics. It would be of interest to the 'Electronics Experimenter'.

Bruce Norton

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## Start Soon On Sandy Hollow - Ulan Line

**The Premier's recent announcement that the Sandy Hollow-Ulan rail line is to be built will mean that work will restart on a project after a 30-year recess.**

As reported in Newsletter No 40 the new 148km line is to be built to carry coal from the Ulan Colliery to Newcastle. The existing line between Sandy Hollow and Muswellbrook is also to be upgraded; the whole project costing about \$40 million.

The Sandy Hollow-Maryvale rail line saga initially began in 1911 when a Royal Commission on Decentralisation in Railway Transit recommended the establishment of a port at Salamander Bay at Port Stephens, and the construction of various railway lines to feed the proposed new port. The Maryvale-Gulgong-Muswellbrook line had top priority in this planning and the cost was then estimated at \$2.36 million.

Four years later the Parliamentary Standing Committee on Public Works started to investigate the possibility of building the line but owing to the dissolution of Parliament, the enquiry was not concluded.

In 1918 the Minister for Public Works received a deputation from the Bonython and Goulburn River Railway League which asked that a survey be made of the proposed line. This request was approved.

Transport News, March / April 1980

During 1922 delegates from the areas affected by the proposed line again interviewed the State Minister, following which the Railway Commissioners were asked to submit a report on what progress had been made.

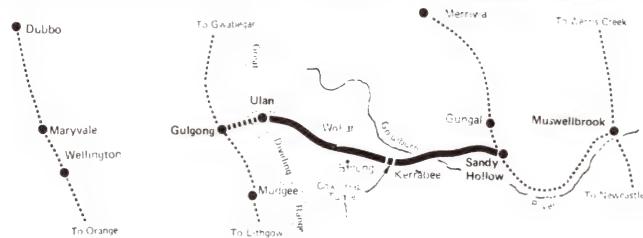
But it was not until 1925 that a further Parliamentary Committee formally recommended that the railway be constructed from Sandy Hollow to Maryvale.

This committee favoured construction of the proposed line because it would form an additional cross-country link between southern, western, northern and north-western districts; develop a large area of agricultural and pastoral country; afford facilities for the quicker removal of stock during drought periods; open up areas for general produce, coal and other products, and bring about decentralisation in railway transit by enabling direct communication between the western and north-western areas of the State with Newcastle.

### Start in 1936

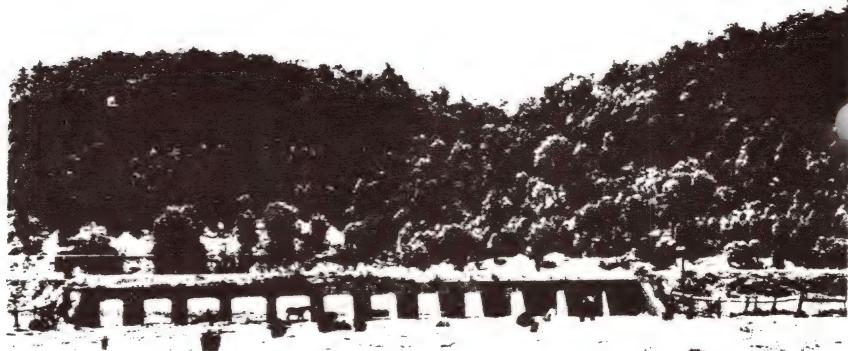
Construction of the line was finally authorised by Act No 28 of 1927, assented to on 7 March 1927 (as subsequently amended by Act No 1 of 1940).

Work was actually started in July 1936 and the new project then to cost \$4.4 million, provided much

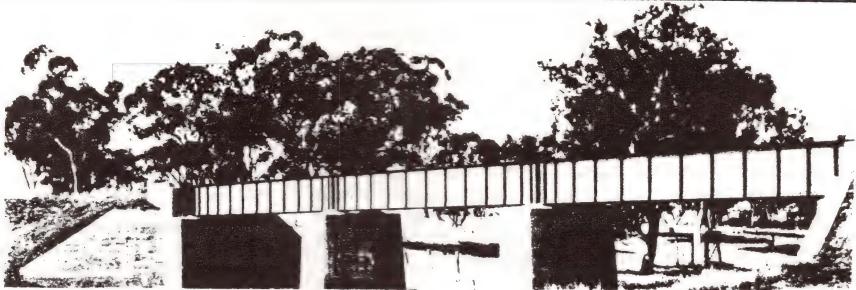


*Map showing route of Sandy Hollow-Ulan Line.* ▲

*Waterways and culverts are in good condition — only minor attention being necessary.*



*One of the many bridges which will carry unit coal trains in about two years' time.* ▲



*There are 16 bridges on the line between Sandy Hollow and Gulgong.*

eeded employment for hundreds of men who were engaged on relief work.

Plans at that stage provided for building 12 stations between Sandy Hollow and Maryvale. These were to be located at Baerami; Widdin; Bylong; Akuna; Wollar; Wilpinjung; Ulan (site of the present coal mine and catalyst for resumption of building the line); Mebul Road; Goolma; Spicer's Creek; Drill Creek and Comobella.

During the period 1936 to October 1939, extensive earthworks (170km) were completed, five tunnels driven and many bridges and culverts were well advanced.

But with the start of World War II shortages of labour and materials due to war demands caused the slowing down of activity on the line. Although the Commonwealth Government contributed \$162 000 in 1941 in order to assist in speeding up work, a decision was reached on 13 January 1942 that construction of the line was to be stopped apart from concreting some of the tunnels.

## 1950 Cessation

In 1946 there was a resumption of work on the project, but due to a shortage of steel it was not possible to complete some bridge superstructures and on 13 December 1949 the last equipment was taken off the job and transferred to the Branxton-Muswellbrook Rail Duplication Project. All work had ceased on the Sandy Hollow-Maryvale line by June 1950.

In 1958 the State unsuccessfully approached Federal authorities for help in getting work started again on the line. It was estimated then that another \$13.5 million would be required to finance the balance of work.

No further important developments occurred until 1967 when the Development Corporation of NSW was directed by the NSW Cabinet to undertake an investigation of the Sandy Hollow Line.

The Development Corporation in 1970 recommended against resumption of the line which would cost a total of \$24.2 million at that stage. The Corporation was of the opinion that there would be no net advantage to the State by building the line and

it was unable to find any evidence of any consequential development or significant population growth in the area which would result from completion of the railway.

Thus the 'ghost' railway remained in limbo until 1977 when White Industries Limited (owners of the Ulan Colliery) started negotiations and offered to help complete the railway from Sandy Hollow to the mine site. The Company encouraged completion of the line as its Colliery production was on the increase and the new route to Newcastle for export coal would only be about half the distance that coal currently has to be carried to Port Kembla.

The Premier's recent announcement has brought construction of the Sandy Hollow Railway one important step closer and recommencement of work after 30 years is now imminent.

## Work to date

As indicated, extensive work has already been carried out during the 'stop-start' history of the Sandy Hollow Line. This includes:

### Formation

The earthworks are about 90 per cent complete. However considerable additional work will be necessary to widen the formations to suit modern standards.

Approximately 600 metres have been washed away by the Goulburn River and a diversion will be necessary at this location.

Scouring of the formation at two other locations will require about 1.2km of retaining wall fill.

Much of the remaining formation has been affected by minor erosion and is badly ridden with rabbit burrows.

### Tunnels

There are five tunnels on the line, all of which have been completed except No 3 tunnel which needs 990 metres of excavation and lining for its completion.

Concrete in the remaining tunnels requires patching, while No 2 tunnel will have to be re-lined for 155 metres.

### Waterways and culverts

All culverts are in place and in good condition but it will be necessary to clean them out, cut channels and carry out some concrete patchwork on head walls.

### Bridges

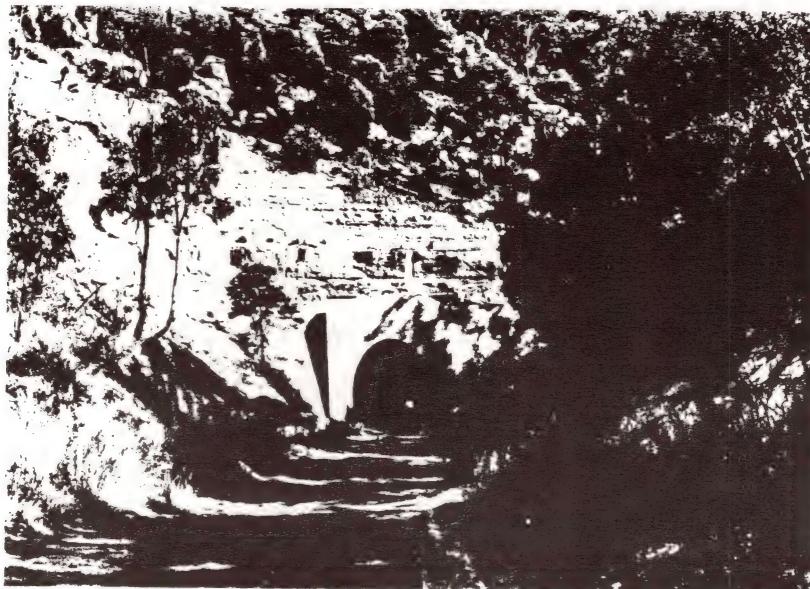
There are 16 bridges on the section from Sandy Hollow to Gulgong. About half the bridge steelwork still has to be erected. The remaining steelwork is in good condition but will need sand-blasting and painting. It will also be necessary to check the condition of underwater bridge piers.

### Muswellbrook-Sandy Hollow

This section is currently laid with 30kg track with ash ballast only. Part of the big project soon to be started includes upgrading this section with new ballast and 53kg track standards.

Fortunately the original timber bridges have already been replaced by concrete structures during previous upgrading of this section of line.

The visionary outlook of our railway forefathers will come to fruition in about two years time when another 'Coals to Newcastle' freeway is opened!



One of the five tunnels, all of which have been completed except No 3 tunnel which needs 990 m of excavation.

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## THE GAUGE "1" MODEL RAILWAY ASSOCIATION

### President:

Major General R.D. Houghton, C.B., O.B.E., M.C., D.L.

### Vice-Presidents:

K.G. Gillespy, E.C. Griffith, H.R. Wilson,

### Chairman:

J.F. Dobson

### Committee:

P.F. Howland, R.E. Hines, R.G. Poulter, M.B. Hack,

Assistant Honorary Secretary: F.L. Steel Assistant Honorary Treasurer: J.A.C. Houghton

Honorary Secretary: S.J. Roberts Honorary Treasurer: Mrs. I.A. Roberts

112, Clarendon Road, Broadstone, Dorset, BH18 9HY.  
Tel: Broadstone 694213 (STD Code 0202).

### SOME FACTS ABOUT THE ASSOCIATION

Gauge '1', with a track gauge of  $1\frac{1}{4}$ ", and a scale of  $3/8"$  or 10mm to the foot, is the largest of the model railway scales. Before 1914, it was the premier gauge, but after the first World War the smaller scales were gradually introduced and Gauge '1' declined until it became a minority interest.

Up to 1939 however, reasonable supplies of models and components were available from the model railway trade. After the second World War, and its attendant difficulties of supplies in the hobby, it looked as if Gauge '1' would vanish completely. However, as a result of correspondence in the model railway press, a number of Gauge '1' enthusiasts met together in 1947, and founded the Gauge One Model Railway Association, to stimulate interest in the scale both with the public and the model railway trade.

Gauge '1' is still a minority interest, but the objects of the Association have been achieved, and for years the membership has been steadily increasing. Gauge '1' stands at the cross roads between the model railway hobby and model engineering, and attracts devotees of both hobbies by its different facets. To the model railway man interested in 'scenic' model railways, 10mm to the foot is a very satisfying scale in which to work, and the size of model locomotives and carriages means that a great deal of detail can be added easily. The track can be built from scale components exactly as the prototype, and with the large scale it is easy for the amateur to build satisfactory pointwork and obtain trouble free running.

To the model engineer, whose main interest in the railway field is in building live-steam models, Gauge '1' is the smallest scale in which live steam operation is really satisfactory. The ever increasing cost of parts and raw materials or larger scale models is a distinct advantage to Gauge '1', and there is currently a great deal of interest in the building of live steam models in this scale.

The Association is NOT a localised club, but has members throughout Britain and indeed the world. At the last count, there were members in seventeen countries. Contact is maintained with members by means of a Newsletter, published three times a year. A number of members who have garden layouts have 'Get-Together' meetings during the summer months, and the Annual General Meeting and running session, held in London in November, always attracts a large attendance.

The Association frequently assists at club exhibitions, by means of running displays or static exhibits, and has been a regular at the Model Railway Club's Easter Exhibition in London, where a large variety of layouts have been shown over the past twenty odd years.

The publication of a booklet describing in detail the construction of a simple Gauge '1' steam locomotive, written by two members, entitled 'The Project', has proved very popular, and is an excellent engine for the beginner to start on. The booklet is issued free to new members, together with at least three back issues of Newsletter, a List of Members, and a list of "Services and Suppliers".

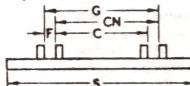
Details of these publications, and further particulars of the Association, are available from the Honorary Secretary, 112 Clarendon Road, Broadstone, Dorset BH18 9HY, or J. MacMicking, 247 Eastern Valley Way, Middle Cove NSW 2068 Ph. (02) 95- 5988

# GAUGE 'I' MODEL RAILWAY ASSOCIATION STANDARD DIMENSIONS FOR GAUGE 'I'

SCALE - 10 MM = 1 FOOT

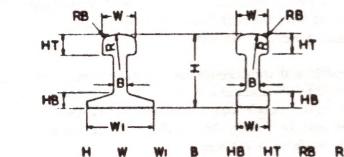
**TRACK AND RAIL**

Gauge I (Standard) 44.45 mm. (1.75 ins)  
 Gauge IF (Fine) 45.0 mm.



	C <sub>max</sub>	F <sub>min</sub>	G <sub>min</sub>	CN	S	Sleeper Width
I mm.	38.50	3.00	44.45	41.50	90.0	9.50†
I ins.	1.518	0.118	1.750	1.636	3.543	0.375
IF mm.	41.50	1.75	45.00	43.45	90.0	9.50†
IF ins.	1.634	0.069	1.772	1.703	3.543	0.375

† 12.70 (0.5 ins) for crossing timbers.  
 If G is increased on curves, C must be decreased by the same amount.



	H	W	Wi	B	HB	HT	RB	R
FB mm.	5.50	2.50	5.00	1.00	1.00	1.50	0.40	7.0
FB ins.	0.216	0.098	0.197	0.039	0.039	0.059	0.016	0.276

	H	W	Wi	B	HB	HT	RB	R
BB mm.	5.00	2.38	1.72	1.00	1.40	1.50	0.40	7.0
BB ins.	0.197	0.094	0.087	0.039	0.055	0.059	0.016	0.276

**TRACK SPACINGS (Centre to centre)**

Straight running lines — 115 mm. (4.527 ins) min.

Curved running lines under 12'-0" radius — 120 mm. min.

Curved running lines under 8'-0" radius — 125 mm. min.

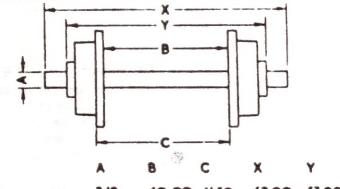
Straight sidings — 120 mm. (4.724 ins) min.

**ELECTRIC PICK-UP****CONDUCTOR RAIL**

Height above running rail (top) — 3.0 mm (0.119 ins)  
 Centre from inside edge of running rail — 14.0 mm.

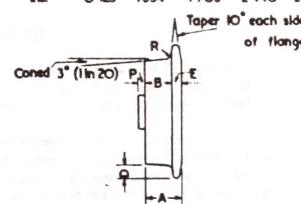
**STUD CONTACT**

	1	IF
Skate width	0.73 ins.	0.50 ins.
Studs - Maximum spacing	4.50 ins.	4.50 ins.
Maximum height above rail	0.62 ins.	0.62 ins.
Max. rise between adjacent studs	0.62 ins.	0.62 ins.
Maximum offset from centre-line of track (i.e. at turnouts)	312 ins.	487 ins.
OVERHEAD LINE — Proposed Standards	mm.	
Standard height of contact wire above rail — 160		
Minimum height - 50 mm. Maximum height - 180		
Maximum offset from centreline of track (allowance to be made for cant on track) —	12.5	

**WHEELS AND AXLES**

	A	B	C	X	Y
I mm.	3.18	40.00	41.50	62.00	53.00
I ins.	0.125	1.574	1.634	2.440	2.087

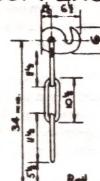
	A	B	C	X	Y
IF mm.	3.18	42.00	43.25	62.00	53.00
IF ins.	0.125	1.654	1.703	2.440	2.087



	A	B	D	E	P	R
I mm.	6.00	4.50	2.00	1.50	0.50	0.50
I ins.	0.236	0.177	0.076	0.059	0.020	0.020

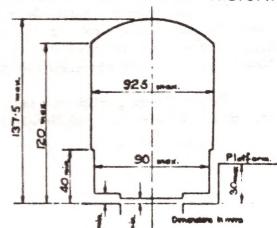
	A	B	D	E	P	R
IF mm.	5.00	4.00	2.00†	1.00	0.50	0.50
IF ins.	0.197	0.158	0.079	0.039	0.020	0.020

† 150 (0.59 ins) if sprung.

**BUFFERS AND COUPLINGS**

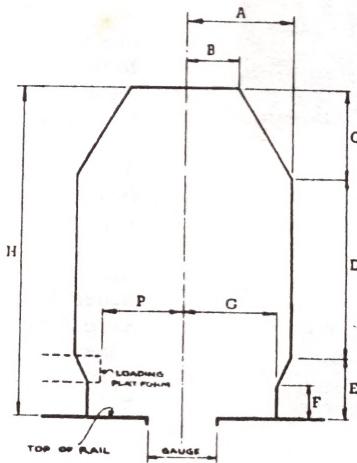
Buffers  
 Height above rail - 35 mm  
 Centres — 57 mm

Couplings  
 Links - 18 swg. diameter

**STOCK GAUGE BRITISH PROTOTYPES**

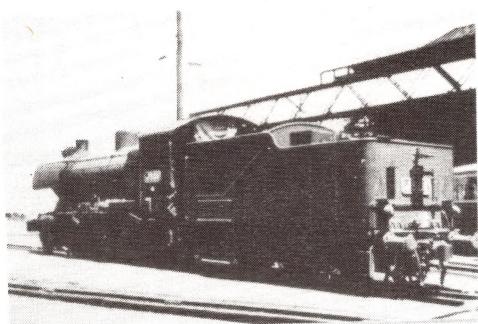
TRACKWORK TEMPLATE

S6000



Suggested clearance measurements for N Gauge. These figures obtained by using HO data multiplied by  $\frac{67}{160}$ . D. Bennett, 200 President Ave. Kirribilli, NSW 2228, would like to hear fellow N Gaugers comments.

UNIT	SIZE (mm)
A	13.6
B	7.1
C	11.4
D	22.4
E	7.6
F	4.3
G	12.0
H	41.4
P	10.4



J 501 at Ballarat loco



R Class at speed



R 748 on Down Passenger train at Murooa

Photos by P Ritchie

ଶ୍ରେଣୀ A.M.R.A. ଲୋକୁଳ  
MERITORIOUS AWARDS

UP TO 1981

Ivor Bunker	John Skilton
Bob Gorrell	Keith Robinson
Alan Dowel	Dot Treseder
Stephen Suggitt	Tony Grey
Rex Little	Jim Christie
Norm Read	Jack Parker
Jack Treseder	Rup Ackland
Mal Baker	Bill Morehouse
John Sneddon	George Bra
John Dunn	Arthur Haye
Graham Larmour	Simon Mead
Ken Down	John Harry
David Ellis	Harold Warren
Arthur Robinson	Cec Wall
Bruce Lovett	Jack Eagles
Eric Doherty	Ted Thoday
June Larmour	Audrey Cornish
Fyfe Thorpe	Ray Brownbill
Eric Lyon	

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*Hints, Tips and Queries,*

by G. Duncan

Tools and Materials

Angle nippers, spring loaded, insulated handles (as if that mattered) will even act as small tin snips (into corners), cut brass wire up to 1/16", 0.010" tinplate, plastic sprues, ideal for nipping bits off corners, trimming plastic kit parts, NOT rails and all sorts of other things. Cost about \$3.99 (mine cost \$2.99 - I got the sale price!!!) from Tandy's.

A tiny Phillips head screwdriver - the smallest I've seen - VERY handy for some of the tiny cross-head screws found on brass (yes - some of us work on brass!!) locos - cost 50 cents - mine came from Dick Smith Electronics at Richmond, Victoria. They had some very small standard end screwdrivers too, but I had plenty of them!!